

Meeting Notes: Community Advisory Group - Aerojet Superfund Issues, September 27, 2006

1. Attendees

Alex MacDonald (Regional Water Quality Control Board), Charles Berrey (EPA), Jackie Lane (EPA), Janis Heple, Jean Young (SCWA), Larry Ladd, Angel Ball, Jenny Byars, Rick Bettis, Michael Girard (Aerojet), George Waegell, Joyce Martin, Rodney Fricke (Aerojet), Alan Jackson (Aerojet), Brian Anderson (Boeing), Paul Harris (GSWC), Helene and Fred Wright, Paul Schubert (GSWC), Nathan Schumacher (DTSC), Kendra De Santolo, Eugene Morris, William Huidsten (Aerojet), Bruce Lewis (ERM), Kimee Skim, Victor Copeland (National Lawyers Guild), Joyce Rosenberg, Tricia Carter (Recorder, CH2M HILL),

2. Approval of Meeting Minutes

The July meeting minutes were accepted as final. No comments were provided.

3. General Aerojet Cleanup Overview, Alex MacDonald, RWQCB

Alex MacDonald provided an overview of the Aerojet Cleanup program and activities:

Contaminants of Concern

- Solvents – TCE, PCE, Freon, Chloroform
- Perchlorate – component of solid rocket propellant
- NDMA – associated with liquid rocket fuel
- Fuels – hydrazine-based, kerosene

Cleanup Process

- Conduct Remedial Investigation (RI)
- Prepare Feasibility Study (FS)
- USEPA Prepares Proposed Plan – Public Meeting
- USEPA Issues a Record of Decision (ROD)
- Consent or Unilateral Order Issued
- Design Remedy
- Implement and Monitor the Remedy

Aerojet Historical Overview

- WDRs First Adopted 1952
- Over 40 Orders – WDRs, NPDES Permits, C&As, Referrals to Attorney General (AG)
- Discharges to Surface Water, Landfills, Injection Wells, to Ground
- Aerojet Commences Groundwater Pump and Treat in 1982
- Aerojet Added to Superfund List in 1983
- 1989 Partial Consent Decree Signed

Aerojet-General Corporation 1989 Partial Consent Decree

Requires Aerojet to:

- Conduct a Remedial Investigation/Feasibility Study (RI/FS) for Entire Site

- Monitor Water Supply Wells and American River
- Provide Alternate Water Supply Reports for Triggered Wells
- Operate and Meet Standards for Groundwater Extraction and Treatment Systems (GETs)

IRCTS Historical Overview

- 4000 Acre Parcel
- Owned and Operated by both McDonnell-Douglas and Aerojet-General Corps.
- Currently Owned by Aerojet
- Soil and Groundwater Contamination
- 1994 DTSC Order

Initial Investigations

- 1990-1993 Aerojet Completes Phase I Remedial Investigation
- 1994-96 Performs Interim Remedy in the American River Study Area
- December 1995 – EPA affirms Provisional Reference Dose for Perchlorate (4-18 ppb)
- Aerojet Directed to Evaluate Perchlorate off-site to West

Lost Water Supplies

- Since 1997 18 Water Supply Wells Off-line Due to Pollution
- Interim Response Actions – Construction of New Wells and Pipeline/Storage Facilities
- Development of Contingency Plans for Interim Water Supply Replacement
- Evaluating an Implementing Long-Term Replacement Measures

Western Groundwater Operable Unit

- Remedial Investigation/Feasibility Study Completed in October 2000
- Record of Decision in July 2001
 - Cleanup Values of 4 ppb for perchlorate, 0.0013 ppb for NDMA, and 5.0 ppb for TCE
- Unilateral Administrative Order (UAO) Issued by EPA in August 2002
 - UAO Requires Design and Implementation of Remedy
 - Includes Contingency Plan for Replacement Water Supplies

Initial Implementation of Western Groundwater Remedy

- Add Additional Extraction Wells on Aerojet Property
- Construct 3 Off-Property Extraction and Treatment Systems
- Discharge Treated Groundwater Under an NPDES Permit
- Continue Evaluation of western Plume in Area 3 and Need for Modification of Design
- Add New Extraction and Treatment Facilities as Needed

2002 PCD Modification

- Divide Aerojet Site for Investigation and Reduce Time to Get to Cleanup
- Have an enforceable Schedule to Complete RI/FS
- Enhance the Requirements of Alternative Water Supply

2002 PCD Modifications

Alternate Water Supply Contingency Plan

- Must Provide Immediate Interim Water Supply for Most Threatened Wells
- Required to Be Modified As Needed
- In Effect Until Western Groundwater Record of Decision is Enforceable

2002 PCD Modifications

- Additional Financial Assurance
- Carve-out of a Portion of Aerojet Property from the PCD
- Deed Restrictions and Covenants on Carve-out Property

Several items of concern and interest were addressed after the presentation including:

- Wellhead treatment
- City/County Water Rights (water rights issues)
- Plume migration vs. containment
- Replacement water supply
- Disposal and transport of ion exchange spent material

One comment card was submitted during the meeting from Eugene Morris:

Re: July 26, 2006 CAG meeting minutes, Item #5.

“How did the City (or County) of Sacramento obtain the rights to water pumped from the City of Rancho Cordova. AGC proposes to pump 3,000 gpm from proposed Coloma Road Site. This would be over 4 million gallons per day that would service 6,000 homes or 15,000 people. As the water table drops and water becomes scarce, who will pay for the replacement water? Why does Sacramento City have rights on water extracted from Rancho Cordova?”

Alex noted that Aerojet and Boeing have agreements with the County that ultimately signed their rights for the treated groundwater over to the County. The County is pursuing projects that will bring some of the water back into the community to replace lost water supplies, while using surplus water for other projects in eastern Sacramento County.

4. Inactive Rancho Cordova Test Site (IRCTS) Cleanup Update and Public Meeting, Ed Cargile, DTSC

DTSC conducted their public meeting for the Draft Removal Action Work Plan for the Central Area Operable Unit and provided an update on the cleanup activities within the IRCTS.

Inactive Rancho Cordova Test Site

Site History:

- 1930s to 1960: Much of the IRCTS was dredged for gold by the Natomas Company.

- 1956: Aerojet purchased the 3,900 acre property and leased the eastern 1,700 acres to the Douglas Aircraft Company.
- 1961: The McDonnell Douglas Corporation (MDC) purchased the 3,900 acre property from Aerojet. MDC established six areas encompassing approximately 300 acres for assembly, development and testing of solid and liquid rocket propulsion systems. The facility closed in 1969.
- 1970-1979: Facility deactivated and test stands demolished.
- 1979-1984: MDC sold or leased some parcels within the Administration Area (Security Park).
- 1984: Aerojet reacquired the remaining property.
- DTSC issued the Consent Order 6/30/94.
- The Consent Order was modified in 1997, releasing 1,100 acres of clean buffer land (WNN).

Administration Area/Security Park:

- The 70 acres of the Admin Area were developed in phases from 1956 until closure in 1969. Security Park development started in 1977.
- RI work began in 1995. Al, Pb, and thallium were found to be elevated and resulted in small soil removal.
- Investigations indicate soil vapor impacts predominantly due to TCE, cis-DCE, PCE, methylene chloride, chloroform and Freon located adjacent to LOX lab.
- High concentrations have been identified down to the water table at 140 feet bgs.
- Administration Area is the source area for the Admin plume. (TCE high 270 ppb in groundwater)
- An effective soil vapor extraction system was installed in 2002. Over 1,200 lbs of VOCs removed since November 2002.

Alpha/IOC-1 Complex:

- A 65-acre complex used for Thor and Saturn rocket testing between 1957 and 1969.
- RI investigations started in 1991.
- The unsaturated zone investigation identified TCE, PCE and perchlorate.
- The Alpha/ICO-1 Complex is the source area for the Alpha plume.
- Soil Vapor extraction was initiated in January 2002 and upgraded in 2005.
- Over 5,000 lbs of VOCs removed since January 2002.

Beta Complex:

- The Beta complex was utilized for liquid oxygen and liquid hydrogen rocket systems testing for the Saturn V program.
- RI was completed in November 2001 and concluded that no contamination sources existed.
- Area is proposed for No-Further-Action with site-wide groundwater control.

Kappa/Gamma/IOC-2:

- Kappa Complex
 - 8 acre facility constructed in 1961 used for testing of rocket engines.
- Gamma Complex
 - 25 acre facility adjacent to Kappa constructed in 1964 to handle hypergolic fuels (self igniting).
- IOC-2
 - Operated between 1958 and 1961 to evaluate launch procedures for the Thor missile adverse weather conditions.

Kappa/Gamma/IOC-2:

- VOCs (mostly TCE and methylene chloride) were detected in soil vapor at 50 feet and 75 feet below ground surface.
- Groundwater contamination beneath Kappa-Gamma comes from Alpha/IOC-2 study area.
- Low levels of hydrazine detected but no NDMA.
- Metals typically at or below background concentrations.
- Kappa-Gamma deep soil contamination may represent a threat to groundwater.
- The remedy for the Kappa/Gamma/IOC-2 study area is a Deed Restriction that will prevent the installation of facilities that could increase the volume of infiltrating water into the vadose zone (i.e. septic systems, leach fields, runoff percolation ponds).
- RAP approved February 10, 2006.

Sigma Complex:

- 15 acre facility used for solid rocket motor testing, system and component testing and solid fuel removal.
- RI conducted between 1983 and 2001.
- Perchlorate found in soil from near surface (4ppm) to top of groundwater (310 ppm) beneath former waste water collection pond.
- Perchlorate detected in perched water 30 to 90 feet bgs.

- Perchlorate and TCE detected in groundwater beneath Sigma (430,000 ppb and less than 2 ppb respectively).

DM-14 Assembly Area:

- The DM-14 Assembly Area was utilized to assemble the solid propellant Genie Missile.
- DM-14 was constructed in 1956 and the last MDC work was completed in 1969.
- RI investigations began in 1992 and identified Freon 113 in the central portion of the DM-14 site.
- The Freon 113 is at low concentrations at significant depth and does not represent a risk to groundwater or human health.

Propellant Burn Area:

- An 8 acre facility used to burn solid and liquid propellants during the 1950 and 1960s.
- The RI conducted between 1983 and 2000 found dioxins in surface soils and VOCs and perchlorate in deep soils and groundwater.
- An interim RAP for the dioxin-impacted soils was approved in 2002 and field work was completed in August 2006.
- Pilot studies and feasibility work for deep VOCs and perchlorate will be conducted over next few years.

GET F Spray Field:

- The former Spray Field is located in the NW corner of the IRCTS and was used to discharge VOC-treated groundwater from the western edge of the Aerojet Superfund Site via an irrigation sprinkler system.
- An air stripping unit removed VOCs, however this treatment did not remove perchlorate, which was not a chemical of concern at the time.
- The Spray Field was operated from December 1984 until mid-1990.
- Investigation work began in 2005 and preliminary findings indicate there are not surface soil impacts, some very deep soil impacts and groundwater impacts from perchlorate.

Municipal Landfill:

- The Municipal Landfill (aka White Rock Dump 1) was operated as burn dump by Sacramento County from the early 1950s until 1957.
- Domestic and municipal refuse was placed between dredge piles and burned periodically.
- Ash and non-combustibles were pushed into piles.
- RI work identified elevated Pb and dioxin levels in site soil with no impacts to groundwater.

- Sacramento County is proposing waste consolidation, a soil cap acceptable for open area recreational use and a deed restriction to maintain the land as a park and limit potential disruption of the soil cap. The RAP is scheduled for 2007.

Other Areas of Interest:

- Sigma Solid Waste Landfill: RI work completed in 2004 and did not detect any impacts to soil or groundwater. Recommended for no further action (NFA).
- Metal-lined Hole: NFA approved by DTSC in December 2000.
- Antenna Station: Investigation work was completed in 2004 and NFA approved by DTSC in 2005.
- Circular Feature: investigation completed in 2003 and NFA proposed.
- Rice Hull Ash Area: The Rice Hull Area was created in the early 1950s to produce high purity ash to be used as an oil absorbent. Greasweep Western operated the process until 2005. The rice hulls ash is not hazardous and may be used as a soil amendment for future development.

Groundwater Characterization:

- Aquifers consist of permeable river sediments separated by fine grained deposits forming less permeable aquitards.
- Impacted aquifers (units) beneath the Site include:
 - The Laguna Formation (Unit B).
 - The transition zone (Unit C).
 - The upper Mehrten Formation (Unit D).

Groundwater Characterization (cont.):

- Chemical of Concern Include:
 - Perchlorate
 - Trichloroethylene (TCE)
 - Other VOCs include cis, 1,2-DCE and Freon

Groundwater Characterization (cont.):

Groundwater Source Areas Include:

Administration Area

Alpha/IOC-1

Sigma

Propellant Burn Area

GET F Spray Field

Aerojet Superfund Site

Central Area Operable Unit (CAOU)

Draft Removal Action Work Plan:

- The CAOU is defined as the unsaturated soils within the buffer lands surrounding the various Operable Units within the IRCTS.
- The CAOU Remedial Investigation (RI) was started in 2004 and completed in August 2006.
- The CAOU RI identified 78 sites of potential interest within the CAOU.
- RI work eliminated all but two of the potential sites-Sites 74 and 80.
 - Site 74 is 2.3 acres with approximately 7,600 cubic yards of ash deposits with levels of heavy metals (antimony, arsenic, cadmium, calcium, copper, lead mercury and zinc) and dioxins/furans above residential screening levels.
 - Site 80 is 0.3 acres with approximately 540 cubic yards of soils with levels of heavy metals (arsenic, cadmium, copper, lead and zinc) and dioxins/furans above residential screening levels.

Draft Removal Action Work Plan (RAW):

- Approval of this RAW will release 2,200 acres of IRCTS land for unrestricted uses if the following requirements are met.
 - Removing contaminated shallow soil at Sites 74 and 80.
 - Recording of deed restrictions on the use of groundwater beneath the 2,200 acres.
 - Completing the site-wide groundwater Remedial Action Plan.
 - Better defining of soil vapor at Alpha/IOC-1.
 - Surveying buffer zones and installing chain-link fencing around land with surface soil contamination.

Draft Removal Action Work Plan

- Aerojet has contractors ready to begin the excavation at Sites 74 and 80 and to complete characterization at the Alpha/IOC-1 OU.
- Deed Restrictions are in draft form and under review.
- The Site-wide Groundwater RI/FS is complete and the draft RAP is under review.
- Draft Removal Action Work Plan
- Public comment started on September 1, 2006 and ends on October 2, 2006.
- We will respond to any comment in writing.

- If major changes are not required, then the RAW will be approved by mid October 2006.
- Remedial actions will begin immediately upon approval with a goal of completion in early 2007.
- The RAW may be reviewed at our office at 8800 Cal Center Drive, the RC Library or in the internet at:
http://www.envirostor.dtsc.ca.gov/public/profile_report.asp?global_id=34370069 – Click on the Community Involvement button.

5. Aerojet Community Updates: Mike Girard, Aerojet

Mike noted that he did not have any updates for this meeting, however, this agenda item will be used to inform people of future meetings addressing the Aerojet Superfund Site.

6. Next Meeting

Next meeting: Wednesday, November 15, 2006, City Hall, 2729 Prospect Park Drive, Rancho Cordova, 7 p.m. to 9 p.m.